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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,388	08/24/2001	Takateru Imai	72093	3452

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 07/07/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/939,388

Applicant(s)

IMAI ET AL.

Examiner

Michael Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 6-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 6-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was treated as made **without** traverse, since otherwise has not been indicated in Paper No. 6.
2. Claims 1-5 are examined on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "...and cleaning the crushed resinous pieces of the respective kind to remove foreign bodies...", as per claim 1 (in recitation of cleaning means) is indefinite because of non-establishment of proper antecedency for pieces of respective kind, and the metes and bounds of such "respective kind" are not readily ascertainable.

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over a combination of the following references: Okamoto et al (U.S. 4,566,641) with WO

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200045994 with **Peterson (U.S. 5,365,075)** with **Lande (U.S. 5,282,713)** with **Scarola et al (U.S. 5,433,652)**.

Before discussing the issues of rejection Examiner would like to address the structure and interpretation of the claims. Such, independent claim 1 calls for an

assembly comprising 4 separate units:

- a) unit for crushing the resin (crusher)
- b) unit for packing the crushed resin into bags (charger for bags)
- c) analyzer operable by irradiating with light beam (classificatory)
- d) cleaner comprising a unit that discharges the bags and a unit that cleans the crushed material.

Each one of these four units is well known and routinely used in the art as integral parts in the processes of plastics recycling.

Thus, **Okamoto et al** (U.S. 4,566,641) discloses a plastic breaking apparatus (crusher) for cutting and breaking plastic or fibrous sheet materials (abstract, claim 1). Okamoto clearly suggest to a person skilled in the art that the crushing step and crushing apparatus are not operated in "vacuum", but the crushing is performed, "...to make easy next processes for burning, reclaiming or regenerating the waste material" (last line of abstract);

WO 200045994 discloses an assembly that uses crusher units comprises using multistage crushing rolls having phase-deviated irregularities formed on the surfaces of each pair and which crushes thermosetting resin pieces into specified sizes, which crushes thermosetting resin pieces into particle diameters of 50-1000 μm .

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and a specified device disposed downstream of the crushing unit; and another device in which a coarse crusher with 2-4 mm edges together with a selection unit to remove the undesirable materials through a destaticizing device, powder roller, classifier, dust-treatment unit, and packaging section.

The assembly includes grain size adjustment and instantaneous separation and classification. Materials can be cleaned without marring to allow **reuse of the articles** quickly, efficiently and evenly. (Derwent abstract)

Front view of a device for producing beads.

The assembly includes mixing unit 12, flow-adjusting feeder 13A , selection unit 14 coarse-crushing unit 15 , pulverization unit(17), switching valve 16, sieving part 18 classification unit 21-22, bagging device 23, destaticizing unit A.

Peterson (U.S. 5,365,075) discloses an apparatus for automated identification of recycled plastic articles with comparison of direct and diffuse transmitted light, comprising a light source and an array of detectors positioned in a manner such as to allow simultaneous measurement of a directly transmitted light signal and a diffused light signal, the signals are compared and used to differentiation of recycled resinous material (abstract). Peterson also suggests to those skilled in the art that the success of the future of plastics recycling is in the ability to collect, identify, sort, clean and resell the commingled feed stream of plastic waste (col. 1, lines 45-56).

Lande (U.S.5,282,713) provides the apparatus for removing recyclable materials from bags (see Fig.1 and abstract). Lande also provides conveyor means having tines which engage and assist the conveyor in transporting the bags of materials to a

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discharge bin. The bags are eventually removed from the tines and transferred into a mechanism where they are bundled for disposal or recycling.

Scarola et al (U.S. 5,433,652) discloses an apparatus for the cleaning of plastic flakes to be recycled. Water is added to the plastic flakes and high shear agitator is provided, so that the contamination is removed from the surface of the plastic flakes. The contaminant containing water is then separated from the cleaned plastic flakes.

Thus, all the above references individually teach the apparatus that presents one unit of the claimed assembly, and all of them are just focused on a specific unit, or specific means depending on the narrow area of endeavor. However, each of the references presents a wider picture of recycling and regenerating of plastics and clearly suggests that the specific machine or unit or means are used in conjunction with other means that all together provide for assembly for plastic recycling.

--- In the instant case claims to a resin recycling system is rejected as obvious over a prior art references, which differs from the prior art in claiming a crusher, a packaging means, a screener, and a cleaning device integral, whereas the prior art comprise several units serving for the same purpose. However, "if the use of a one piece construction instead of the structure disclosed in [the prior art], it would be merely a matter of obvious engineering choice" ---making plural parts unitary, **In re Larson**, 144 USPQ 347 (CCPA); **In re Lockhart**, 90 USPQ 214 (CCPA 1951)

In the instant case the rejection is also made in the sense of **In re Donaldson**, 29 USPQ2nd 1845, and the O.G. Notice, 1162 O.G. 59-61, since it is not certain

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-whether the reference elements are equivalent of the claimed element (structure, as functionally claimed) in carrying out the function;

-whether or not an element recited in a reference is the equivalent to a means plus function limitation in a claim under 35 USC 112, 6-th paragraph. Then the burden shifts to Applicants to show that the prior art is not an equivalent.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Szekely (U.S. 6,372,807) discloses a method and apparatus for conversion (regeneration) of mixed plastic waste; WO 99/34927 discloses a completely dry automatic processing of packaging wastes with the assistance of a combination of separation methods and automatic sorting devices while obtaining completely sorted individual components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (703) 305-0400. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872 9310 for regular communications and (703) 872 9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 2450.

A handwritten signature in black ink, appearing to read "M. Kornakov", with a long, sweeping flourish extending from the end.

Michael Kornakov
Examiner
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June 29, 2003